

Exercise 1 Let f be a function defined by $f(x) = x^3$ and g be a function defined by $g(x) = \frac{1}{x^3}$. Use the pair of functions f and g to find the following values, if they exist. If the value does not exist, enter DNE.

(a) $(f + g)(2) = \boxed{\frac{65}{8}}$

(b) $(f - g)(-1) = \boxed{0}$

(c) $(g - f)(1) = \boxed{0}$

(d) $(fg)\left(\frac{1}{2}\right) = \boxed{1}$

(e) $\left(\frac{f}{g}\right)(0) = \boxed{DNE}$

(f) $\left(\frac{g}{f}\right)(-2) = \boxed{\frac{1}{64}}$